ABSTRACT

Aim of the study:

To evaluate the labial bone thickness in maxillary and mandibular incisor region with point A and point B as reference in individuals with Class I, II Div 1 and III malocclusion.

Materials and Methods:

CBCT images of forty subjects were randomly selected for this in-vitro study from the database available in our department. All the reconstructed images were aligned in axial, sagittal and coronal planes. On the 3D reconstructed CBCT images, a standardized horizontal position (FH) constructed on the image and a perpendicular line was drawn from FH through A (FH- A- point line) as a vertical reference line. The most forward incisor (MFMxI) located and the bone thickness measured at 3 points at the heights of CEJ, mid root region and at the level of root apex. Likewise, with B point as reference the labial bone thickness of mandibular incisor (MFMdI) was measured.

Results:

On comparing between Class I, II div 1, & III, The labial bone thickness is lesser at CEJ level for all the 3 classes (p=0.01) and Class II div 1 seems to have a lesser maxillary labial bone thickness from CEJ to mid-root

level which was statistically significant (p=0.03) when compared to class I and class III malocclusion. The variation in labial bone thickness is significant at all levels (CEJ, mid-root, apical region) for mandible and Class III seems to have a lesser bone thickness at all these levels of mandibular labial region (p=0.00).

Conclusion:

Anterior bony support and incisor position were different between various malocclusion. Class II div 1 have a lesser maxillary labial bone thickness from CEJ to mid-root level and Class III have a lesser bone thickness at all the levels of Mandibular labial region. Class I have a relatively moderate labial bone thickness in both maxilla and mandible. Clinicians should beaware that the range of maxillary incisor movement in Class II patients and mandibular incisor movement in class III patients are limited.

Key words: *Cortical Bone thickness, malocclusion, CBCT.*